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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/627,662	07/28/2000	Sam S. Lightstone	CA990022US1	3033

24033 7590 11/21/2003

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EXAMINER

LY, ANH

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 11/21/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

4

## Office Action Summary

Application No.

09/627,662

Applicant(s)

LIGHTSTONE ET AL.

Examiner

Anh Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 08/26/2003 with respect to claims 27-56 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims ~~1~~ -56 are pending in this application.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 27-30, 37-40 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,591,269 issued to Ponnekanti in view of US Patent No. 6,457,017 issued to Watkins et al. (hereinafter Watkins).

With respect to claim 27, Ponnekanti discloses receiving data records to load into the table (loading new data records of a relational database into database in the operation of indexing: col. 7, lines 51-63); selecting one of a first operation and second operation, wherein the first operation incrementally update the index on the table as each received data record is added to the table and the second operation rebuilds the index from the table after all the received data records have been added to the table (a client/server database system with methodology for performing online indexing including rebuild, update delete indexes: col. 2, lines 58-60, col. 3, lines 11-30 and col. 13, lines 35-67; to meet the user's need, the user is able to select or use the operation of indexing via user interface for receiving the user commands: col. 4, lines 20-26 and item 160 in fig. 1B) and using the selected first operation or second operation to update the index with the received data (the online of performing indexing by user who would enter the commands to update or rebuild the index via user interface: col. 4, lines 20-26 and col. 13, lines 35-67).

Ponnekanti discloses an online of performing indexing of a client/server system for a data records of a relational database, the commands including update index, delete index and rebuild index from which the user would select or user for performing

indexing for data records, but Ponnekanti does not teach incrementally updates the index on the table.

However, Watkins discloses performing incremental updates the index by indexing subsystem via indexing interface for receiving the commands from the user (col. 3, lines 10-20).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ponnekanti with the teachings of Watkins so as to obtain an operation for incremental updates the index in order to increase the database system response time. This combination would have made the method for maintaining indexes of all files in the system (Watkins – col. 58-67) and maintaining one or more database indexes on each table and allowing the database records of table to be organized in many ways to increase the speech of retrieving any particular data record of a table (Ponnekanti – col. 3, lines 4-30).

With respect to claim 28, Ponnekanti discloses determining which of the first operation or second operation is more efficient, wherein the first or second operation determined to be more efficient is the selected operation used for updating the index with the received data (rules for indexing including rebuild and update: col. 13, lines 50-67).

With respect to claim 29, Ponnekanti discloses wherein determining which operation is more efficient is a function of a percentage of the received data records to add to the table and characteristics of the index (efficient function or method for indexing: col. 8, lines 22-30, col. 9, lines 48-55 and col. 11, lines 15-28).

With respect to claim 30, Ponnekanti discloses wherein the characteristics of the index used in determining which operation is more efficient comprise a size and a complexity of the index (B-tree and the size of index: col. 17, lines 12-48 and col. 19, lines 25-35).

With respect to claims 31, Ponnekanti discloses wherein the index comprises a binary tree structure, and wherein a height of the index tree is indicative of the size and complexity of the index (col. 6, lines 65-67, col. 7, lines 1-67 and see fig. 2B).

With respect to claims 32-33, Ponnekanti discloses wherein determining which operation is more efficient further comprises considering at least one of the following factors: an estimated time to sort the index keys and an estimated time to rebuild the index from the sorted keys (col. 2, lines 1-16 and col. 6, lines 30-45); maintaining a list of threshold values for different index sizes (col. 13, lines 35-67 and col. 16, lines 2-67).

With respect to claim 34-36, Ponnekanti discloses the number of the received data records as a percentage of all data records in the table (col. 7, lines 50-55); wherein the index comprises a binary tree and wherein the list of threshold values provides one threshold for each of a plurality of different height index binary trees, wherein the threshold selected for comparison with the comparison value is based on the height of the index to update (size of b-tree or binary tree data structure: col. 5, lines 56-67 and col. 7, lines 55-64; see fig. 2B and col. 7, lines 1-28); and the threshold value and wherein the second operation is more efficient if the comparison value is greater than the threshold value (col. 8, lines 31-50 and col. 13, lines 50-67).

Claim 37 is essentially the same as claim 27, except that it is directed to a system rather than a method ('269 of loading new data records of a relational database into database in the operation of indexing: col. 7, lines 51-63; a client/server database system with methodology for performing online indexing including rebuild, update delete indexes: col. 2, lines 58-60, col. 3, lines 11-30 and col. 13, lines 35-67; to meet the user's need, the user is able to select or use the operation of indexing via user interface for receiving the user commands: col. 4, lines 20-26 and item 160 in fig. 1B; and the online of performing indexing by user who would enter the command to update or rebuild the index via user interface: col. 4, lines 20-26 and col. 13, lines 35-67; and '017 of col. 3, lines 10-20), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 38 is essentially the same as claim 28, except that it is directed to a system rather than a method (rules for indexing including rebuild and update: col. 13, lines 50-67), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 39 is essentially the same as claim 29, except that it is directed to a system rather than a method (efficient function or method for indexing: col. 8, lines 22-30, col. 9, lines 48-55 and col. 11, lines 15-28), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 40 is essentially the same as claim 30, except that it is directed to a system rather than a method (B-tree and the size of index: col. 17, lines 12-48 and col.

19, lines 25-35), and is rejected for the same reason as applied to the claim 30 hereinabove.

Claim 41 is essentially the same as claim 31, except that it is directed to a system rather than a method (col. 6, lines 65-67, col. 7, lines 1-67 and see fig. 2B), and is rejected for the same reason as applied to the claim 31 hereinabove.

Claims 42-43 are essentially the same as claims 32-33, except that they are directed to a system rather than a method (col. 2, lines 1-16 and col. 6, lines 30-45; and col. 13, lines 35-67 and col. 16, lines 2-67), and are rejected for the same reason as applied to the claims 32-33 hereinabove.

Claims 44-46 are essentially the same as claims 34-36, except that they are directed to a system rather than a method (col. 7, lines 50-55; size of b-tree or binary tree data structure: col. 5, lines 56-67 and col. 7, lines 55-64; see fig. 2B and col. 7, lines 1-28; and col. 8, lines 31-50 and col. 13, lines 50-67), and are rejected for the same reason as applied to the claims 34-36 hereinabove.

Claim 47 is essentially the same as claim 27, except that it is directed to a program rather than a method (269 of loading new data records of a relational database into database in the operation of indexing: col. 7, lines 51-63; a client/server database system with methodology for performing online indexing including rebuild, update delete indexes: col. 2, lines 58-60, col. 3, lines 11-30 and col. 13, lines 35-67; to meet the user's need, the user is able to select or use the operation of indexing via user interface for receiving the user commands: col. 4, lines 20-26 and item 160 in fig. 1B; and the online of performing indexing by user who would enter the command to update or



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rebuild the index via user interface: col. 4, lines 20-26 and col. 13, lines 35-67; and '017 of col. 3, lines 10-20), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 48 is essentially the same as claim 28, except that it is directed to a program rather than a method (rules for indexing including rebuild and update: col. 13, lines 50-67), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 49 is essentially the same as claim 29, except that it is directed to a program rather than a method (efficient function or method for indexing: col. 8, lines 22-30, col. 9, lines 48-55 and col. 11, lines 15-28), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 50 is essentially the same as claim 30, except that it is directed to a program rather than a method (B-tree and the size of index: col. 17, lines 12-48 and col. 19, lines 25-35), and is rejected for the same reason as applied to the claim 30 hereinabove.

Claim 51 is essentially the same as claim 31, except that it is directed to a system rather than a method (col. 6, lines 65-67, col. 7, lines 1-67 and see fig. 2B), and is rejected for the same reason as applied to the claim 31 hereinabove.

Claims 52-53 are essentially the same as claims 32-33, except that they are directed to a system rather than a method (col. 2, lines 1-16 and col. 6, lines 30-45; and col. 13, lines 35-67 and col. 16, lines 2-67), and are rejected for the same reason as applied to the claims 32-33 hereinabove.

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Claims 54-56 are essentially the same as claims 34-36, except that they are directed to a system rather than a method (col. 7, lines 50-55; size of b-tree or binary tree data structure: col. 5, lines 56-67 and col. 7, lines 55-64; see fig. 2B and col. 7, lines 1-28; and col. 8, lines 31-50 and col. 13, lines 50-67), and are rejected for the same reason as applied to the claims 34-36 hereinabove.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Us patent No. 6,622,142 issued to Murray et al.

"Dynamic Maintenance of web Indexes Using Lanmarks" of Lipyeow Lim, Min Wang, Sriram Padmanabhan, Jeffrey Scott Vitte and Ramesh Agarwal

"Synthtic Workload performance Analysis of Incremental Updates" of Kurt Shoens, Anthony Tomasic and Hector Garcia-Molina

"Incremental Updates of Inverted Lists for Text Document retrieval" of Kurt Shoens, Anthony Tomasic and Hector Garcia-Molina

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**Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703 305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

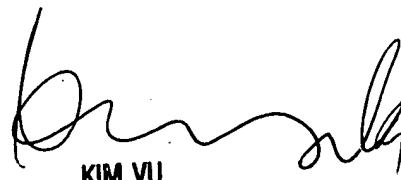
Washington, D.C. 20231

or faxed to: Central Office (703) 872-9306 (effective from 08/04/2003)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.

AL  
Nov. 7<sup>th</sup>, 2003

  
KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100